

# SHIELDALLOY CORP.

## NEW JERSEY

EPA ID# NJD002365930



**EPA REGION 2**  
**CONGRESSIONAL DIST. 02**

Gloucester County  
Borough of Newfield

## Site Description

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The 67.5 acre Shieldalloy Metallurgical Corp. site houses an active specialty plant where chromium alloy and other products have been produced. Past disposal practices included the release of process wastewater directly to an unlined lagoon, causing groundwater contamination. This resulted in extensive chromium contamination in an area that is dependent upon groundwater for drinking supplies. In 1970, Shieldalloy Metallurgical Corporation (SMC) replaced the unlined lagoon with a series of lined surface impoundments to treat the chromium-contaminated wastewater. In 1979, SMC constructed a decontamination plant for the treatment of chromium-contaminated groundwater. Since 1979, the decontamination plant has treated contaminated groundwater prior to discharge into the Hudson's Branch Tributary of the Maurice River. In 1998, SMC removed and disposed of the contaminated chromium sludge from the lined surface impoundments. There are slag piles and other wastes on site, including low-level radioactive wastes that are licensed by the Nuclear Regulatory Commission. There are approximately 56,000 people living within a 2-mile radius of the site. The closest residence is located less than 1/5 mile away. Private wells are located within a mile of the site. Private and municipal wells in the vicinity of the site have been shown to be contaminated with chromium and volatile organic compounds (VOCs). Because of this, a well restriction area was established in the area in 1986. The private wells affected by chromium are within the well restriction area, and the residents within the restricted area have all been connected to the public water supply. Therefore, no residents are believed to be exposed to contaminated groundwater. A municipal well affected by chromium was used only for non-contact cooling water and never as a potable source. This well is no longer in service. Another municipal well is affected by VOCs, but groundwater from this well is treated prior to distribution.

**Site Responsibility:** This site is being addressed through a combination of Federal, State, and potentially responsible parties' actions.

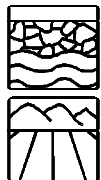
### NPL LISTING HISTORY

Proposed Date: 09/01/83

Final Date: 09/01/84

## Threats and Contaminants

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Both on- and off-site groundwater is contaminated with VOCs and chromium. Soil is contaminated with heavy metals. The Hudson's Branch Tributary of the Maurice River contains heavy metals. Off-site threats to health include drinking or direct contact with groundwater and surface water, inhaling contaminated air particles, and eating contaminated fish from the nearby surface waters.

## Cleanup Approach

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The site is being addressed in three stages: initial actions and two long-term remedial phases focusing on cleanup of the groundwater contaminant plume, and soil and sediment contamination at the facility.

## Response Action Status

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**Initial Actions:** The potentially responsible party, SMC, has been pumping and treating chromium-contaminated groundwater since 1979. The initial pump and treat system was designed to pump and treat 80 gallons per minute (gpm) of contaminated groundwater. In 1989, SMC built a new ion exchange treatment facility to pump and treat 400 gpm of contaminated groundwater. However, technical problems prevented the facility from operating at design capacity. In 1992, SMC installed an electrochemical treatment unit which is effectively treating the groundwater contamination.



**Groundwater Plume:** The potentially responsible party completed a study of the chromium contaminant plume. During this study, VOC contamination was detected in groundwater underneath and downgradient of the Shieldalloy Corporation facility. A significant portion of the VOC and chromium contamination has been delineated. However, further delineation of the chromium and VOC contamination will be completed during the initial design stages of the groundwater remediation system. The New Jersey Department of Environmental Protection (NJDEP) signed a Record of Decision (ROD) in September 1996 which selected a remedy for the groundwater contaminant plume. The selected remedy calls for modification of the existing groundwater remediation system to provide for the complete capture and treatment of groundwater contamination attributable to the site.



**Source Control:** The potentially responsible party, under NJDEP and U.S.

Environmental Protection Agency (EPA) oversight, has completed a study concerning the nature and extent of soil and sediment contamination at the site. The study will be used as the basis for recommending alternatives for the final clean up for soil, surface water, and sediment. Alternatives for cleanup of the above contamination are currently being developed. Furthermore, chromium-contaminated sludge has been removed from on-site surface impoundments.

**Site Facts:** In 1984, the NJDEP and the potentially responsible party entered into an Administrative Order on Consent requiring the party to prepare a study of the site's groundwater contamination problems and to develop systems to address the plume. In 1986, the State directed the party to improve its groundwater decontamination system by modifying and upgrading it immediately and expanding the groundwater monitoring program. In 1986, the EPA filed an action against the party in Federal District Court for failure to certify compliance with groundwater monitoring and financial assurance requirements for the three surface impoundments used for groundwater and process water treatment. In 1988, the NJDEP and Shieldalloy Corp. signed an Administrative Order on Consent which required SMC to implement an upgraded pump and treat system, to perform a site-wide study, and provide for closure of nine surface impoundments.

## Cleanup Progress (Threat Mitigated by Physical Clean-up Work)

The initial treatment of contaminated groundwater has reduced the threat to human health and the environment by mitigating migration of contaminated groundwater while studies leading to the final selection of cleanup technologies for the Shieldalloy Corporation site are taking place. The existing groundwater pump and treat system is currently treating approximately 400 gallons per minute of contaminated groundwater. Implementation of the groundwater remedy selected in the 1996 ROD would further minimize potential risks posed by exposure to contaminated groundwater by providing for the complete capture of groundwater contamination related to the site. Furthermore, connection of potentially contaminated residences with private potable wells to the municipal water supply ensures that residents are not exposed to site-related groundwater contamination while cleanup of the site continues.

SMC has completed the closure of the series of on-site surface impoundments, which included the removal and off-site disposal of approximately 5445 tons of dewatered chromium sludge. In addition, approximately 1,385,000 gallons of chromium contaminated filtrate from the dewatering process were treated in the on-site groundwater treatment plant and discharged to the Hudson's Branch in accordance with SMC's New Jersey Pollutant Discharge Elimination System Discharge permit.